Patent claims

Sub a1

1. Process for producing a partially self-adhesively treated backing material, comprising the following steps:

a) coating a first backing material with domes and/or polygeometric structural forms of self-adhesive composition,

a1 the add-on of the self-adhesive composition to the backing material being at least 3 g/m^2 and

a2 the surface coverage of the backing material being at least 1%,

b) permanent deformation of at least some of the domes and/or polygeometric structural forms.

2. Process according to Claim 1, characterized in that at least 10%, preferably 50% and, with very particular preference, 75% of the domes and/or polygeometric structural forms are permanently deformed.

3. Process according to Claims 1 and 2, characterized in that at least some of the domes and/or polygeometric structural forms are permanently deformed to an extent such that a closed surface is formed and/or the domes and/or polygeometric stuctural forms are connected to one another at least partially by means of lines.

4. Process according to Claims 1 to 3, characterized in that permanent deformation of the domes and/or polygeometric structural forms takes place by means of a controlled temperature regime during coating and/or by the introduction of radiative energy, mechanical energy or secondary energy.

5. Process according to Claims 1 to 4, characterized in that the self-adhesive composition is applied to the first backing material by halftone printing, thermal screen printing or gravure printing or by the nozzle process.

6. Process according to Claims 1 to 5, characterized in that the add-on of the self-adhesive composition to the first backing material is greater than 6 g/m^2, preferably from 20 to 1000 g/m^2 and, with particular preference, from 40 to 180 g/m^2.

Sub a2

7. Process according to Claims 1 to 6, characterized in that the first backing material is a roller 6 or a belt with an abhesive surface, the abhesive surface comprising in particular a coating of silicones or fluorine compounds or a plasma-coated release system, which is applied very particularly with a weight per unit area of from 0.001 g/m^2 to 3000 g/m^2, preferably from 100 to 2000 g/m^2.

8. Apparatus [sic] according to Claims 1 to 7, characterized in that the abhesive properties of the surface of the roller 6 are matched so that the applied self-adhesive composition adheres to the thermally conditioned roller, preferably to a cooled roller.

9. Process according to Claims 1 to 8, characterized in that the domes and/or polygeometric structural forms are transferred to a second backing material during or after the permanent deformation.

10. Process according to Claim 9, characterized in that the second backing material is guided against the roller 6 or the belt by way of a pickup roller 7 which is positionable in the peripheral direction and/or radial direction with respect to the abhesive roller or to the abhesive belt and/or may be applied with a pressing force, so that the degree of permanent deformation may be influenced.

11. Process according to Claim 9, characterized in that the transfer of the self-adhesive composition takes place by means of a pair of deflection devices 8, 9 which is arranged at different positions along the periphery of the abhesive roller 6 or of the belt, the second backing material being guided a distance along the surface of the abhesive roller 6 or of the belt.

12. Process according to Claim 11, characterized in that the deflection devices 8, 9 comprise rollers which are positionable in the peripheral direction and/or radial direction with respect to the abhesive belt and/or may be applied with a pressing force, so that the degree of permanent deformation may be influenced.

13. Process according to Claims 1 to 12, characterized in that the first backing material has a surface having a random or regular three-dimensional geometric structure.

14. Process according to Claims 1 to 13, characterized in that the self-adhesive composition is a hotmelt adhesive composition.

15. Process according to Claims 1 to 14, characterized in that the profile of viscoelastic properties of the domes and/or polygeometric structural forms is established by controlling the heat energy from the coating process, by the at least partial introduction of additional energy, or by the at least partial removal of heat energy, or by a combination of the techniques.

16. Process according to Claims 1 to 15, characterized in that the domes and/or polygeometric structural forms applied to the backing material have a plasticity/elasticity ratio at the time of deformation, at a frequency of 100 rad/s, of greater than 0.3 to 50.

17. Process according to Claims 1 to 16, characterized in that the hotmelt adhesive composition is in foamed form and/or can be crosslinked by means of electron beams and/or UV.

18. Process according to Claims 1 to 17, characterized in that the backing material on steel has a bond strength to the reverse face of the backing of at least 0.5 N/cm, in particular a bond strength of between 2 N/cm and 12 N/cm.

19. Use of a partially self-adhesively treated backing material according to one or more of the preceding claims for industrial and medical products, especially plasters, medical fixings, wound coverings, doped systems, especially those which allow the release of substances, and orthopaedical and phlebological bandages and dressings.

20. Use according to Claim 19, characterized in that, following its production, the partially self-adhesively treated backing material is lined or provided with a wound pad or padding and/or is sterilized, preferably by means of γ (gamma) radiation.

21. Use of a partially self-adhesively treated backing material according to one or more of the preceding claims for industrial and reversible fixings which on removal cause no damage or injury to a variety of substrates, such as paper, plastics, glass, textiles, wood, metals and minerals.

22. Use of a partially self-adhesively treated backing material according to one or more of the preceding claims for technically permanent bonds which can be separated only with partial splitting of the substrate.